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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/661,725	09/14/2000	Donald C D Chang	PD-200101	9196

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THE DIRECTV GROUP INC  
PATENT DOCKET ADMINISTRATION RE/R11/A109  
P O BOX 956  
EL SEGUNDO, CA 90245-0956

EXAMINER
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TORRES, MARCOS L

ART UNIT	PAPER NUMBER
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2617

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/12/2007	PAPER

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If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

09/661,725

Applicant(s)

CHANG ET AL.

Examiner

Marcos L. Torres

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 12-17 is/are allowed.
- 6) ☒ Claim(s) 1-11, 18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.
2. Applicant's arguments, see page 8, filed 12-12-06, with respect to the rejection(s) of claim(s) 7 and 8 under 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Mallinckrodt.
3. Applicant's arguments, see page 9, filed 12-12-06, with respect to claims 12-16 have been fully considered and are persuasive. The rejection of claims 12-16 has been withdrawn.
4. Applicant's arguments filed 12-12-06 for claims 1-6, 9-11 and 17-18 have been fully considered but they are not persuasive. Regarding applicant argument that Gross does not disclose scaling a plurality of elements to form a plurality of beams, Gross disclose that the payload antenna is a phased array antenna (see col. 4, line 47-54), that type of antenna consist on a plurality of elements to form a plurality of beams, therefore Gross disclose the above limitation. For the argument on the last sentence of page 6, please see col. 7, line 44-60.
5. Regarding applicant argument that in Hansen there is no teaching for the use of canceling system in a stratospheric platform, as previously stated Gross discloses using a phased array antenna, Hansen also is a phase antenna array also admitted by the applicant in the next argument, since both antenna are the same type of antenna it

would be obvious to one ordinary skill in the art at the time of the invention to use it in a stratospheric platform. A phased array antenna consist of two or more active antenna – called elements—arranged (also called arrayed) so the electromagnetic fields effectively add in some direction and cancel in other directions<sup>1</sup>.

6. Regarding that there is no teaching for the additional elements of a phase array antenna. As previously stated both are phased array antenna.

### ***Claim Objections***

7. Claim 7 is objected to because of the following informalities: The term multiplexer/demultiplexer is unclear if it refers to both or only one. For examination purposes it would be understand as multiplexer or demultiplexer. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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<sup>1</sup> Newton's Telecom Dictionary, 20th edition March 2004

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1, 5, 9-11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross 6,507,739 in view of Hansen US005361074A .

As to claims 1, Gross discloses a communications system (see col. 1, lines 8-9) comprising: stratospheric platform having a payload controller (see col. 1, lines 9-11; col. 4, lines 52-54) and a phased array antenna having a plurality of main array antenna elements for generating a plurality of communication beams (see col. 4, lines 49-52); a gateway station in communication with said stratospheric platform (see col. 5, lines 10-12), said gateway station scaling the plurality of elements to form a plurality of beams and auxiliary element output, said gateway station communicating a control signal to the stratospheric platform to communicate a scaling of elements to form the communication beams and the auxiliary element output (see col. 5, lines 10-22). Gross do not specifically disclose a plurality of auxiliary elements for canceling interference from the side lobes of the plurality of the communication beam. In an analogous art, Hansen

discloses a plurality of auxiliary elements for canceling interference from the side lobes of the plurality of the communication beam (see col. 1, lines 30-35). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to combine these teachings in order to have a better communication avoiding interference.

As to claim 5, Hansen discloses a system wherein said auxiliary element output is a function of a direction of the plurality of the communication beams (see col. 3, lines 1-43).

As to claim 9, Gross discloses a system wherein said ground station is coupled to a terrestrial network (see col. 5, lines 16-22).

As to claim 10, Gross discloses a system wherein said terrestrial network comprises the Internet (see col. 10, lines 13-22).

As to claim 11, Gross discloses a system wherein the terrestrial network comprises the public service telephone network (see col. 5, lines 39-44).

Regarding claim 18 is the corresponding method claims of system claim 1. Therefore, claim 18 is rejected for the same reason shown above.

12. Claims 2-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Hansen as applied to claims 1, 5, 9-11 and 18 above, and further in view of Mallinckrodt US005339330A.

As to claims 2 and 3, Gross and Hansen disclose everything claimed as explained above except for a communications system wherein the controller comprises a demultiplexer for receiving control signals. In an analogous art, Mallinckrodt discloses a communications system wherein the controller comprises a demultiplexer for receiving

control signals (see col. 4, lines 29-42). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to use demultiplexer for recovering a multiplexed signal for the simple purpose of recovering the signal.

As to claim 4, Gross do not specifically disclose a system wherein the element control signals are coupled to an RF feed, the RF feed is coupled to elements of said phased array antenna. However, OFFICIAL NOTICE is taken that it is common and well-known technique to send control signal to an antenna. Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add this technique to the modified Gross system for an enhanced signal transmission and reception.

As to claims 7 and 8, Gross discloses everything claimed as explained above except for a system wherein said gateway station further comprises a code division multiplexer/demultiplexer. Mallinckrodt discloses a system wherein said gateway station further comprises a code division multiplexer/demultiplexer (see fig. 5, item 86; col. 3, lines 45-62).

13. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gross in view of Hansen as applied to claims 1 and 18 above, and further in view of Ide.

As to claims 6 and 19, Gross a system wherein the gateway station comprises a plurality of gates (see col. 5, lines 10-22). Gross do not specifically disclose each having a respective weight, said auxiliary element output being a function of said weight. Ide discloses wherein the gateway station comprises a plurality of multiplication gates each having a respective weight, said auxiliary element output being a function of said weight

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(see col. 3, line 12 – col. 4, line 59). Therefore, it would have been obvious to one of the ordinary skill in the art at the time of the invention to add these teachings to the modified Gross and Yeh system for a better signal transmission and reception.

***Allowable Subject Matter***

14. Claims 12-17 are allowed.

15. The following is a statement of reasons for the indication of allowable subject matter: A communications system, comprising: a ground station having; a beam generator for generating a plurality of beam control signals, a digital beam former circuit receiving the beam control signals and generating a plurality of first element control signals for generating communication beams and a plurality of auxiliary element control signals for canceling interference from the side lobes of the communication beams, a multiplexer multiplexing the first element control signals, and an RF subsystem for communicating an RF signal corresponding to the first element control signals and the auxiliary element control signals; a stratospheric platform having, a payload receiver for receiving the RF signals, a demultiplexer demultiplexing the RF signals into a second plurality of element control signals corresponding to the first element control signals and a second plurality of auxiliary element control signals and generating a plurality of communication beams in response to the second plurality of element control signals and a plurality of auxiliary element outputs in response to the second plurality of auxiliary element control signals. Have not been found or fairly suggested in the prior art search.



***Conclusion***

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Hand delivered responses should be brought to:

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marcos L. Torres whose telephone number is 571-272-7926. The examiner can normally be reached on 8:00am-6:00 PM alt. Wednesday Off.

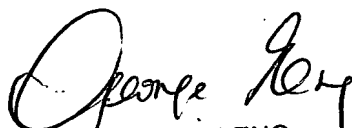
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, George Eng can be reached on 571-252-7495. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Marcos L Torres  
Examiner  
Art Unit 2617

  
mlt

  
GEORGE ENG  
SUPERVISORY PATENT EXAMINER